

138-4.



The Use of Acetylene
in
**Building, Contracting
and Allied Industries**

(1925)

Allen-Liversidge, Ltd.

Victoria Station House, Westminster, S.W. 1.

The Use of Acetylene in Building, Contracting and Allied Industries

ALTHOUGH the Building and Contracting Trades incorporate the practice of many branches of Engineering work, some of them vastly diverse in character, a considerable number have this in common, that, either as a prime factor or as an auxiliary, they find a use for Acetylene in the various operations which their requirements demand. For Acetylene is, of all industrial gases, by far the most versatile.

The following notes briefly trace some of the applications of Acetylene in Building and Contracting work. Other uses will doubtless occur to many readers with a knowledge of the trades' requirements, or be suggested by a perusal of the Catalogue sections which follow this note, wherein technical information and data are given in regard to the various Acetylene appliances supplied by this Company. For the applications of Acetylene are so many and so varied, and new uses are so constantly being found for its economical and convenient employment, that it is impossible to cover the whole field in a single article.

What can be done, and what we have endeavoured to do, is to lay down, as comprehensively as possible, the main lines upon which this universally applicable gas is used in the Building and Contracting industries.

The following notes describe several ways in which prominent firms in these industries are at present making use of Acetylene in order to speed up progress and consequently cut down costs :—

Welding and Metal-Cutting



The photographs here reproduced show Oxy Acetylene Welding and Metal Cutting, using Dissolved Acetylene in Cylinders, on structural work at Hove. The upper picture shows the welding of the fractured under-carriage of a crane. In the centre the operator is cutting out the bent and broken extremity of a steel pile, while below he is cutting circular orifices at the top of steel piles.



Metal-Cutting

Cutting Steel to required lengths in position.

Removing excess lengths, ends or flanges and piercing bolt-holes.

Removing waste ends of concrete reinforcements, and cutting steel or cast-iron gas or water mains.

Cutting cast-iron columns in demolition work.

The process is also of paramount importance in the cutting of cast-iron tubes in drainage and sewage works, and of water or gas mains. An example of its use on an even larger scale is the section of the steel plates which form the inner lining of the walls of the London Tubes when alterations are necessary.

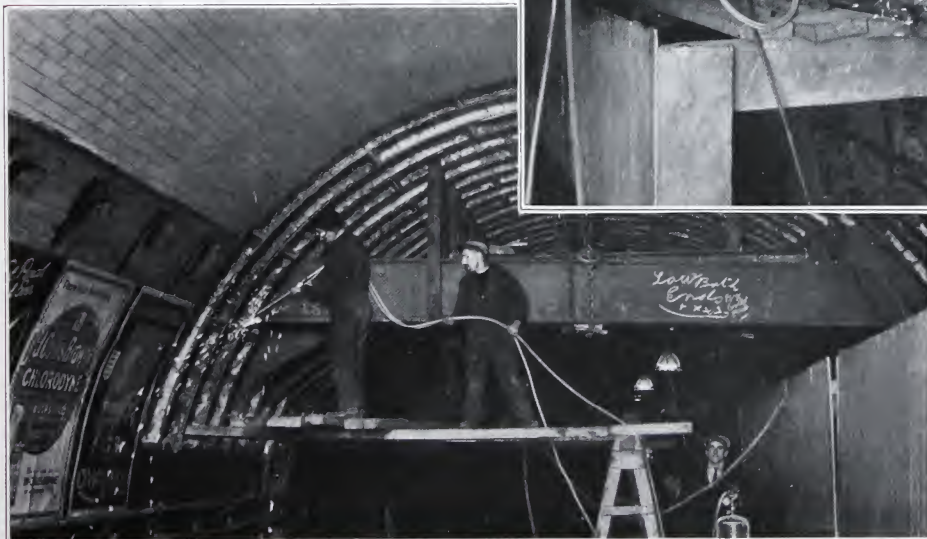
For all such purposes the use of dissolved Acetylene is especially recommended. A portable plant is essential; Oxy-Dissolved Acetylene Cutting equipment is extremely portable. The gas is always ready for use and when one job is completed it may be turned off, the plant carried upon the trolley to the next place of work, and operations immediately recommenced, without any delay beyond the few seconds required to turn on the Acetylene and Oxygen, light up and adjust the flame at the blowpipe tip. It is scarcely necessary to add that the speed at which the actual cutting operation is performed by the Oxy-Acetylene process upon sheet steel, girders or tubes, is so very greatly in excess of that attained by the old fashioned hack-saw as to make any comparison overwhelmingly in favour of the former.

Dissolved Acetylene Cylinders supplied for metal-cutting purposes range from those containing 60 cu. ft. of Acetylene upwards. The 60 cu. ft. Cylinder is very convenient for short period intermittent work on account of its lighter weight.

Examples of Metal-Cutting



Metal-Cutting Operators are here seen working in confined spaces and upon awkward metal-cutting jobs. The upper photograph shows the cutting of cast iron plates forming part of shutters over ash-conveyors for the purpose of introducing new automatic feed appliances at a London Electric Generating Station. The centre and lower photographs show metal cutting during alterations in the Tube at Oxford Circus Tube Station. These pictures clearly demonstrate the convenience of Dissolved Acetylene in cylinders. It would be practically impossible to use any other form of fuel gas in such circumstances.



Welding

The welding of brackets and bracing plates of steel girders.

Repairs to cranes, constructional machinery, bogey trucks, &c.

Jointing of casings and shafts used in ventilating and heating apparatus.

Repairs to water tanks and boilers.

Seaming up of sheet iron flues.

Welding of steel tie-bars in reinforced concrete.

For such purposes Dissolved Acetylene is recommended where the work has to be done upon structures in position, on account of the portability and convenience of the cylinders in which the gas is stored ready for service. Dissolved Acetylene Equipment possesses the additional advantage that, by changing over the welding blowpipe for another suited to the particular operation to be performed, a complete Air-Acetylene Equipment is immediately to hand for Brazing, Soldering, Cable-jointing, or the removal of paint as explained below. Once Oxy-Dissolved Acetylene Equipment is in the possession of the user all that is required to make the change to apparatus suitable for these purposes is a set of inexpensive Air-Acetylene blowpipes, a wide range of which is supplied to suit all classes of Air-Acetylene work under the various categories named above.

Brazing, Soldering and Plumbing Work

Jointing in lead, zinc and copper sheets.

Leadburning for roofing (Oxy-Acetylene—see Cat. H.P. 5, Section II).

General Plumbing work.

Paintburning in Operation



Paintburning on a Government Building in London.



Paintburning on Blackpool Pier.

As explained above, an Air-Acetylene Blowpipe to meet the particular job in hand, and a Cylinder of Dissolved Acetylene with its regulator, tubing, etc., is all the equipment required, and where (as in most cases) Oxy-Acetylene apparatus for welding and metal-cutting is already present, a change over for plumbing work may be very quickly and effectively made. As much of this plumbing work is done in the interior of newly erected buildings, the complete safety of Dissolved Acetylene Cylinders, from which no gas can possibly escape except by the deliberate turning of the valve, is an additional recommendation of its use.

Paintburning

Removing paint from iron, wood or stone surfaces. The recent introduction of the Air-Acetylene Paintburning Blowpipe has effected something like a revolution in the process of paint removal. It is almost incredibly fast in operation and as a time-saver alone has been found to reduce costs incurred by the old style of benzol or paraffin blowlamp by over 50 per cent.

The convenience of gas stored at the service of the operator in portable Cylinders is manifest, while it embodies an infinitely healthier method of work than that of any blowlamp. As an example of the efficiency of the Air-Acetylene Paintburning Blowpipe, it is possible to strip a standard deal door, including panels and rebates, 6 ft. 6 in. by 8 ft. 8 in. in 25 minutes. A London architect who saw this done remarked that it surpassed anything he had seen in speed, finish and facility of operation.

Temporary Lighting

The use of A-L "Imperial Lights" and A-L "Dallights" by builders and contractors eliminates the trouble and expense involved by the temporary erection, on the site of the

A-L

A-L "Da-lights" in Use.



These two photographs show A-L "Da-lights" employed to illuminate building work in Fleet Street, E.C. 4. The advantages of these lights for use in confined spaces are here graphically illustrated.

work, of electrical plant, and the necessary complicated wiring systems. These portable lights are supplied in all sizes to suit every requirement. A-L "Imperial Lights," which are fitted with special reflectors, are recommended where a long concentrated beam of light is required, and are therefore especially suitable for outdoor use. They are the famous self-generating Acetylene Flare-lights which have been used by constructional engineers, dockyard companies and the like all over the world for many years.

A-L "Da-lights," which consist of a cylinder of Dissolved Acetylene to which is fitted a burner and (when required) a reflector, are recommended for interior use and where a widely diffused light is needed. They possess the advantages of all Dissolved Acetylene apparatus in that the gas they contain is stored under pressure always ready for use, and they can be lit and extinguished in a moment by merely turning the valve. It is impossible for gas to escape from them except by the deliberate intention of the operator, and their complete safety is therefore a recommendation additional to their convenience and portability for the illumination required for interior structural operations.

The Company also supply a great variety of Acetylene Hand-lamps such as are used by plasterers, woodmakers, glaziers, ornamental paviors, stone-makers, plumbers, sanitary engineers, etc. The Company welcome both suggestions and questions from users of Acetylene, and are at all times glad to place at the disposal of those engaged in the Building, Contracting, and allied Industries the services of their experts, with a view to the solution of engineering problems in which the use of Acetylene or Oxy-Acetylene processes may prove a helpful factor. The following sections of this Catalogue set out in detail, with prices and the fullest possible particulars, the products of the Company which are supplied to those engaged in the Building and Contracting Industries.

A-L "Imperial" Lights on Structural Work.



A-L "Imperial" Lights in use during structural alterations to an important public building in the Midlands. The photograph was taken without the aid of any illumination other than that supplied by the A-L "Imperial" Lights themselves.



RONALD MASSEY,
106 & 108, VICTORIA STREET
LONDON S.W. 1.